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Internet Voting User Rates and Trust in Switzerland

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When remote internet voting is available as a voting channel for Swiss citizens living in Switzerland, user rates are surprisingly low when compared to general internet penetration rates. Switzerland is a highly decentralized polity. Cantons are thus free to choose which voting channels and which internet voting models they want to offer. Internet voting adoption patterns therefore depend on the model a canton opted to implement: a) with pre-registration user rates started within single digits and took more than a decade to grow above 10 percent; b) without we observed initial spikes above 30 percent (due to the novelty effect) followed by a drop and stagnation around a user rate of 20 percent. Internet voting user rates are on a satisfactory level of 60 percent only for Swiss living abroad [1] because for them the alternative is postal voting with a risk for delays. However, the Swiss domestic trajectories in principle also hold for cases elsewhere [2, 4]. If one wants to see the glass as half full we could say that time itself will fix the problem. Younger cohorts of voters and increasing digitalization will push user rates up in general. However, even in Estonia where internet voting is by now well established, user rates tend to be saturating on a level only slightly above the 30 percent level. In sum, internet voting user rates are in general lower than we would expect them to be.

Fig. 1. Support for trust building measures among Swiss citizens (n = 1228)

Proposition	Trust increase	No trust increase	Don't know/NA
Testing internet voting on a demo website	63	28	9
Making the source code public	22	21	57
Repeated voting until election day	22	68	10
Verifiable vote with code on the ballot	68	22	11
Security audits by external experts	55	33	12

Besides the convenience and popularity of generalized postal voting in Switzerland, the lack of trust in Swiss internet voting seems to be one of the main impediments for higher user rates. Looking at recent survey data [3], the mean trust score on a scale from 0 to 10 for voting at the polling station is 8.5, for mail-in ballots 8.2 and 6.6 for internet voting.

As we can see in Table 1, the potential to increase trust in internet voting among the public in the future seems to be limited since most measures are either already

implemented (audits, demo website, verification code), are not publicly addressable (source code), or do not fit Swiss political culture (repeated voting).

We therefore propose to explore unconventional avenues. Based on social identity theory, [5] suggested that the acceptance of internet voting increases if the people administering the solution are perceived as being of their own. In the Swiss case, this would mean that internet voting would need to be operated in a decentralized manner by each local election management board separately. For ballot and postal voting this is the norm. Despite of the logistical challenge one should look into the decentral operation of internet voting as well. In addition and paradoxically, in our view, the re-materialization of internet voting could provide a solution for this conundrum as well. If a secure decentralized network would be used to "materialize" individual votes and the whole voting process in the form of either an append only "paper trail" or 3D shapes resistant to replicating and reverse-engineering, the requirement for irreplaceable tangible, re-countable objects would be fulfilled. Prototypes of internet voting distributed ballot boxes should therefore be developed and tested.

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